

Attorney Docket # US010131 (5121-9)

Serial No. **09/823,363**
Amdt. dated April 3, 2005
Reply to Final Rejection dated January 5, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Canceled)
2. (Currently Amended) The method according to claim 17 [~~1~~], wherein the video [~~data~~] signal is video data encoded according to the MPEG algorithm.
3. (Currently Amended) The method according to claim 17 [~~1~~], wherein the video [~~data~~] signal is video data encoded according to the MPEG2 algorithm.
4. (Currently Amended) The method according to claim 17 [~~1~~], wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients is selected from among the discrete cosine transform coefficients with~~] represents the highest horizontal frequency in the MB regardless of vertical frequency.
5. (Currently Amended) The method according to claim 17 [~~1~~], wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients has~~] represents the highest vertical frequency in the MB regardless of horizontal frequency.
6. (Currently Amended) The method according to claim 17 [~~1~~], wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients has~~] represents the highest [~~lowest~~] horizontal frequency and the highest vertical frequency in the MB.
7. (Currently Amended) The method according to claim 17 [~~1~~], wherein:
the sub-array of coefficients on which IDCT-coding is performed [~~plurality of predetermined subsets of discrete cosine transform coefficients consist~~] is comprised of one of two [~~subsets~~] sub-arrays:

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a first sub-array [~~subset~~] consisting of one quarter of the DCT [~~discrete-cosine transform~~] coefficients in the DCT coefficient array, the coefficients in said one quarter having [the lowest] lower horizontal frequencies and [the lowest] lower vertical frequencies than the rest of the coefficients in the DCT coefficient array; and

a second sub-array [~~subset~~] consisting of one half of the DCT [~~discrete-cosine transform~~] coefficients in the DCT coefficient array, the coefficients having [the lowest] lower vertical frequencies than the rest of the coefficients in the DCT coefficient array;

IDCT coding [~~inverse-discrete-cosine-transform-decoding~~] is performed on the first sub-array [~~subset~~] if the value of the predetermined coefficient [~~one-of-the-discrete-cosine transform-coefficients~~] is below a predetermined threshold; and

IDCT coding [~~inverse-discrete-cosine-transform-decoding~~] is performed on the second sub-array [~~subset~~] if the value of the predetermined coefficient [~~one-of-the-discrete-cosine transform-coefficients~~] is equal to or greater than the predetermined threshold.

8. (Canceled)

9. (Currently Amended) The system [~~apparatus~~] according to claim 18, [~~arranged-for-use~~] wherein the video [~~data~~] signal is video data encoded according to the MPEG algorithm.

10. (Currently Amended) The system [~~apparatus~~] according to claim 18, [~~arranged-for-use~~] wherein the video [~~data~~] signal is video data encoded according to the MPEG2 algorithm.

11. (Currently Amended) The system [~~apparatus~~] according to claim 18, wherein the predetermined coefficient [~~one-of-the-received-discrete-cosine-transform-coefficients-is-selected from among the discrete-cosine-transform-coefficients-with~~] represents the highest horizontal frequency in the MB regardless of vertical frequency.

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12. (Currently Amended) The system [~~apparatus~~] according to claim 18 [~~11~~], wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients has~~] represents the highest vertical frequency in the MB regardless of horizontal frequency.

13. (Currently Amended) The system [~~apparatus~~] according to claim 18, wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients has~~] represents the highest [~~lowest~~] horizontal frequency and the highest vertical frequency in the MB.

14. (Currently Amended) The system [~~apparatus~~] according to claim 18 [~~10~~], wherein:
the sub-array of coefficients on which IDCT-coding is performed [~~plurality of predetermined subsets of discrete cosine transform coefficients consist~~] is comprised of one of two [~~subsets~~] sub-arrays:

a first sub-array [~~subset~~] consisting of one quarter of the DCT [~~discrete cosine transform~~] coefficients in the DCT coefficient array, the coefficients in said one quarter having [~~the lowest~~] lower horizontal frequencies and [~~the lowest~~] lower vertical frequencies than the rest of the coefficients in the DCT coefficient array;
and

a second sub-array [~~subset~~] consisting of one half of the DCT [~~discrete cosine transform~~] coefficients in the DCT coefficient array, the coefficients in said one half having [~~the lowest~~] lower vertical frequencies than the rest of coefficients in the DCT coefficient array;

the processing [~~computation~~] means performs IDCT-coding [~~inverse discrete cosine transform decoding~~] on the first sub-array [~~subset~~] if the value of the predetermined coefficient [~~one of the discrete cosine transform coefficients~~] is below a predetermined threshold; and

the processing [~~computation~~] means performs IDCT-coding [~~inverse discrete cosine transform decoding~~] on the second sub-array [~~subset~~] if the value of the predetermined

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coefficient [~~one of the discrete cosine transform coefficients~~] is equal to or greater than the predetermined threshold.

15. (Currently Amended) The method according to claim 4, wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients has~~] represents the lowest vertical frequency in the MB.

16. (Currently Amended) The system [~~apparatus~~] according to claim 11, wherein the predetermined coefficient [~~one of the received discrete cosine transform coefficients has~~] represents the lowest vertical frequency in the MB.

17. (New) A method of decoding a video signal, the method comprising:

receiving an array of Discrete Coefficient Transform (DCT) coefficients, said DCT coefficient array having been obtained by performing the DCT algorithm on a macroblock (MB), said macroblock being an array of pixels in a video frame, wherein said DCT coefficient array corresponds to said MB;

determining at least one of the horizontal complexity and the vertical complexity of said MB by determining the value of a predetermined one of the coefficients, wherein said predetermined coefficient represents the highest of at least one of horizontal frequency and vertical frequency; and

performing inverse DCT (IDCT) coding on a sub-array of coefficients within the DCT coefficient array in order to reconstruct said macroblock, wherein the size and position of said sub-array depends on the determined value of the predetermined one of the coefficients having the highest of at least one of horizontal frequency and vertical frequency.

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18. (New) A system for decoding a video signal, the system comprising:

a receiver for receiving an array of Discrete Coefficient Transform (DCT) coefficients, said DCT coefficient array having been obtained by performing the DCT algorithm on a macroblock (MB), said macroblock being an array of pixels in a video frame, wherein said DCT coefficient array corresponds to said MB; and

a processing means for:

determining at least one of the horizontal complexity and the vertical complexity of said MB by determining the value of a predetermined one of the coefficients, wherein said predetermined coefficient represents the highest of at least one of horizontal frequency and vertical frequency; and

performing inverse DCT (IDCT) coding on a sub-array of coefficients within the DCT coefficient array in order to reconstruct said macroblock, wherein the size and position of said sub-array depends on the determined value of the predetermined one of the coefficients having the highest of at least one of horizontal frequency or vertical frequency.

19. (New) The system according to claim 18, wherein the processing means is implemented in at least one of hardware, firmware, and software.